

### **III. The Claims Define Allowable Subject Matter**

The Office Action rejects claims 24-35 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5,852,429 to Scheffer et al. (hereinafter "Scheffer"); and claims 36-46 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5,892,495 to Sakai et al. (hereinafter "Sakai") in view of Scheffer. These rejections are respectfully traversed.

With respect to claims 24 and 30, Scheffer does not disclose a driving method including, "turning on or off the pixels in a second time period being the remaining time period of the single time frame, in accordance with a threshold voltage of a transmissivity characteristic relative to a voltage applied to electro-optical material used in the electro-optical device," as recited in independent claim 24, or a driving method including, "turning on pixels in a second time period which is the remaining time period of the single time frame, in accordance with a threshold voltage of a transmissivity characteristic relative to a voltage applied to electro-optical material used in the electro-optical device," as recited in independent claim 30.

The Office Action admits that Scheffer does not disclose "turning 'on' or 'off' the pixels in the second time period in accordance with a threshold of voltage," but asserts that it would have been obvious to one having skill in the art at the time the invention was made to make up for this deficiency. Applicant respectfully disagrees with this position.

Specifically, the Office Action asserts that Scheffer teaches mathematical equations to calculate the use voltage across the pixel. Additionally, the Office Action asserts that Scheffer teaches averaging the pixel voltage over a frame period, calculating ratio of the magnitude of the peak voltage occurring a given state of the pixel, and illustrating the "on" and "off" states of pixel with respect to "on" and "off" RMS voltage across the pixel.

Thus, the Office Action concludes that it would have been obvious to one having skill in the art to utilize Scheffer's equations (5, 6, 37 and 38) used to establish the amount of

voltage applied in a pixel during a frame period. Moreover, the Office Action concludes that one would have been motivated in view of Scheffer to manipulate the equations in order to provide the desired threshold voltage because Scheffer's equations help the gray scale display system function.

Applicant notes that the Office Action has provided no teaching or suggestion in the prior art that it would have been obvious to one of ordinary skill in the art to modify Scheffer to turn on or off pixels in a second time period being the remaining time period of this single time frame, in accordance with a threshold voltage of a transmissivity characteristic relative to a voltage applied to electro-optical material used in the electro-optical device, as recited in independent claims 24 and 30. Additionally, Applicant submits that the features of claims 24 and 30 are not obvious to one of ordinary skill in the art.

The MPEP §2143.01 instructs that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP §2143.01 further instructs that "[a]lthough a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.'" *See also in re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Federal Circuit. 1990). Applicant respectfully submits that the rejection of claims 24 and 30 is improper in view of MPEP §2144.03 because it lacks evidence of a teaching or suggestion that the features would have been obvious to one of ordinary skill.

Moreover, the Office Action concludes that one would have been motivated in view of Scheffer to manipulate the equations in order to provide the desired threshold voltage. However, even the conclusion drawn in the Office Action fails to teach or suggest each and every feature of independent claims 24 and 30 because the claims do not merely recite providing the desired threshold voltage.

Instead, Scheffer discloses that the equations produce a ratio of the magnitude of peak voltage occurring during a frame period to the "off" RMS voltage since  $U_{\text{off}}$  has been normalized, col. 14, lines 34-36. Additionally, Scheffer discloses that the ratio is dramatically lower than the value of 12.06 which results from the conventional addressing method for high information content LCDs, col. 14, lines 43-46. Moreover, Scheffer discloses that if the time constant of the panel is long compared to several frame periods, then the pixel will assume an average intermediate optical state between fully "on" and fully "off," col. 25, lines 25-28. Thus, Scheffer focuses on averaging the RMS voltage over one frame period which is substantially lower than conventional addressing methods for high information content displays by calculating the ratio of the magnitude of peak voltage across an individual pixel during a frame period, col. 4, line 65-col. line 3.

Thus, the Office Action fails to establish a *prima facie* case of obviousness because Scheffer does not disclose each and every feature of claims 24 and 30. Accordingly, Applicant respectfully asserts that the rejection under 35 U.S.C. §103 should be withdrawn because the applied art does not teach or suggest each feature of independent claims 24 and 30.

With respect to claims 36, 38, 39 and 41, the applied art fails to disclose a driving circuit including, "a signal which designates turning on or off the pixels in accordance with a threshold value of a transmissivity characteristic relative to a voltage applied to electro-optical material used in the electro-optical device to the data lines which correspond to the pixels," as recited in independent claims 36 and 38, or an electro-optical device including, "a signal which designates turning on or off the pixels in accordance with a threshold value of a transmissivity characteristic relative to a voltage applied to the electro-optical material used in the electro-optical device to the data lines which correspond to the pixels," as recited in independent claim 39, or an electro-optical device including, "a signal which turns on the pixels in accordance with a threshold value of a transmissivity characteristic relative to a voltage applied

to the electro-optical material used in the electro-optical device to the data lines which correspond to the pixels," as recited in independent claim 41.

For the same reasons as discussed above with respect to claims 24 and 30, Applicant respectfully asserts that independent claims 36, 38, 39 and 41 are allowable.

Additionally, the Office Action completely fails to recite to any features in the applied art for disclosing a signal which designates turning on or off the pixels in accordance with a threshold value of transmissivity characteristic relative to a voltage applied to electro-optical material used in the electro-optical device. Accordingly, Applicant respectfully asserts that the rejections under 35 U.S.C. §103 should be withdrawn because the applied art, whether taken singly or combined, does not teach or suggest every feature of independent claims 36, 38, 39 and 41.

MPEP §2143.03 instructs that "[t]o establish *prima facie* obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974)."

For at least these reasons, it is respectfully submitted that independent claims 24, 30, 36, 38, 39 and 41 are distinguishable over the applied art. The remainder of the claims that depend from independent claims 24, 30, 36 and 39 are likewise distinguishable over the applied art for at least the reasons discussed above, as well as for the additional features they recite.

#### **IV. Conclusion**

For at least these reasons, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 24-46 are earnestly solicited.